Cedar River Instream Flow Commission
Final Minutes

SPU Water Quality Lab

January 4th, 2012

Organizations/Members Present:

- Seattle Public Utilities -- Tom Fox, Rand Little, Karl Burton
- U.S. Army Corps of Engineers -- Larry Schick
- Washington Department of Fish and Wildlife -- Peggy Miller, Hal Beecher
- Washington Department of Ecology -- Buck Smith
- NOAA Fisheries – Randy McIntosh
- US Fish and Wildlife Service -- Tim Romanski
- Seattle City Light -- Liz Ablow
- Muckleshoot Indian Tribe -- Holly Coccoli
- Guests from USGS -- Chris Magirl, Andy Gendaszek

I. **Call to Order:** Tom called the meeting to order at 9:45 AM.

II. **Approval of Agenda:** Approved as presented.

III. **Approval of Draft Minutes:** Draft minutes from December were approved as presented.

IV. **News and Notes:** Holly mentioned that the Trees on Levees Workgroup (working with the Corps of Engineers) came up with a variance for planting trees on levees. The variance allows 6" to 12" trees on the lower slopes of flood levees but the tops of levees will remain cleared. A temperature model prediction showed that this variance would maintain water temperatures at current levels. This is a proposed variance and the Corps may still choose not to adopt it.

V. **Real Time Water Management:**

Hydrologic Conditions for Tolt and Cedar: Chester Morse Reservoir elevation is approximately 1557.5' and the reservoir is spilling to restore the flood pocket to a target elevation of 1553'. Total precipitation was unusually low in the month of December. Current snow pack is slightly less than average for this

time of year. Mean daily average inflows have recently been close to the 10 percentile although the recent rains have driven them up closer to the 50th percentile. Recent 8-week moving average for inflows to the reservoir fall are over 200 cfs and approximately equidistant between the 10 and 50 percentile lines on the inflow graph. The line has moved up since the graph was created due to the recent rainfall. The recent relatively warm rainy period has decreased the snow water equivalent in the watershed by approximately 1.5 inches. Instream flows below Landsburg were registering approximately 360 cfs before the recent rains. This is in the range of the target flow level (355 to 360 cfs) for Chinook redd dewatering protection. The recent rains drove instream flow levels up to a peak of 1790 cfs (Renton) although flows have subsided somewhat after the main part of the storm passed through. Current flows are approximately 1100 cfs below Landsburg. The forecast calls for relatively dry conditions for the next ten days. All downramping rates and guaranteed flows over the last month were met. However, there was a gap in gage readings due to the loss of battery power at the gage below Landsburg (USGS 12117600). Current demand is approximately 100 MGD and recent demand during late December was very low at 89 MGD, which is the lowest demand recorded in recent years. The low water use is expected at this time of year so revenue projections are not impacted that much. Tom said that the rate structure for water will be modified in the future so revenue projections are less susceptible to uncertainties during the times of year when water use is more dynamic from year to year. Total diversion for 2011 was slightly below that of 2010 and well below the cap established in the Muckleshoot/Seattle Agreement.

Lake Washington: The elevation of Lake Washington is currently at 20.0'. The Corps will continue to manage for this elevation into the spring months.

***Fish Update*:** Rand mentioned that the inclined plane fry trap will be set in place and fishing by mid-January. This is the 20th year of operation for that trap. Karl reported that there were currently 26 Chinook redds in the Cedar River mainstem that were potentially vulnerable to dewatering at winter baseflow levels of 275 cfs. In late November, flows below Landsburg reached approximately 1100 cfs and subsequent field measurements verified that most redds had flattened and settled resulting in 10 redds that were previously vulnerable to dewatering changing to fully protected by the minimum flow regime. Karl passed out a figure showing the necessary flow regimes for 100% Chinook redd protection, 95% redd protection, the guaranteed minimum flow regime and the supplemental flow regime for sockeye outmigration. Karl estimates that all redds would be protected with a flow of 351 cfs and the current target minimum is between 355-360 cfs. Since recent flows have reached close to 1800 cfs, Karl will be returning to the field to measure redd mound depths as soon as flows are back down between 360 and 400 cfs. Karl

expects there will be even fewer redds vulnerable to dewatering after the next round of depth measurements (due to further flattening of redd mounds).

Forecasts and Water Supply Outlook: Larry reported that December 2011was the 4th driest December on record for SeaTac Airport and the driest La Nina December on record. Precipitation late in December brought the monthly total to just over 2". The short term forecast calls for 1/4" to 3/4" of rain over the next 24 hours with slightly more expected in the mountains. The snow level is currently at 6500' but will drop to 3500' this afternoon and will drop again to 2500' tomorrow. A relatively dry trend is expected between Thursday and Sunday although there may be some sprinkles during that period. The extended forecast calls for drier than expected conditions. Snowpack in W. Washington is between 80% and 100% of normal whereas, E. Washington snowpack is registering between 65% and 85% of normal.

VI. Supplemental Studies: Chris Magirl and Andy Gendaszek were in attendance to present their major findings from the Peak Flow Adaptive Management Study. As per the previously distributed information from Chris Magirl, the IFC will be given the opportunity of a courtesy review of the USGS publications related to the peak flow study. Chris said the review will occur after all USGS internal reviews are complete and comments will be addressed at the discretion of the USGS. Chris started the USGS presentation by outlining the major tasks and deliverables for the study followed by a general description of the current geomorphology of the system. Over time, there has been a decrease in channel width and migration, and a decrease of braiding in the mainstem. Andy then presented the results of the scour study from accelerometers, scour chains and sonar detectors. Most scour was initiated on the rising limb of the January 2011 high flow event. There was some additional progressive scour that was recorded after peak flow in some measurement locations. Scour was observed to occur well after the peak flow event in some places, where the channel was redirected from substrate deposition after the peak. Andy explained the methods and results from the hydrophones. Chris told the IFC that Christiana was at a conference and he would present the results from the modeling exercise. Chris described some of the results and the limitations of the model used to reconstruct the study reaches. The model was able to simulate inundation, velocity and sheer stress for variable discharges but, due to instability in the model caused by unsteady flow, the model was not able to predict bedload and morphological changes. Christiana used the model coupled with hydraulic conditions in reaches (Bed Shear Stress) to compute the potential transport of redd-sized sediment at various discharges. Results indicate that confined reaches generate higher shear stresses on the bed and that local effects (e.g. vegetation, LWD, previous floods, sediment supply, bank retreat) can have a great impact on channel response. Chris then walked the IFC through 3 lists of potential parameters to monitor using cost and frequency as primary drivers of an iterative decision making process. The IFC discussed possible scenarios, questions and

parameters for the monitoring program and decided that it would be better to have a subcommittee take the first shot at narrowing the list of parameters. Rand said he would contact interested parties with a date and time for a meeting in Tacoma at the USGS office for further discussion of the monitoring plan. Chris then outlined the wrap up steps for the project including:

1) Finalize analysis of relating model parameters to responses measured by:
   Accelerometers (depth and timing of scour)
   Scour Chains (depth of scour)
2) Finalize analysis of management scenarios.
3) Draft journal articles in progress.

VII. February's IFC Meeting:

1) Nick Gayeski will present the most recent findings from the Chinook Otolith Study.

VIII. Meeting adjourned at 1:35 PM